

## CORN PRICES AND RATION STARCH CONTENT

Jay Giesy, PhD  
Dairy Specialist  
Cargill Animal Nutrition

The energy policy and push for increased ethanol production in the U.S. has resulted in increased ration costs for dairies. Corn and soybean prices are currently at or above 200% of historical levels, which has driven purchased grain prices significantly higher from August 2006 through January 2008. Those increases in grain prices have driven total costs of production up by an estimated 18-27% before including increased forage costs for producers that purchase forage.

Through prudent feed cost management some producers experienced a 'lag' in feed cost increases – a slower increase than corn and soybean markets. Strategies used to make this possible were:

- Forward contracting of ingredient prices.
- Utilizing 'alternative' feedstuffs that may or may not have changed overall starch content of the diet. Some diets have similar starch content, just from different starch sources, while other diets have 2-5% less starch than before.
- Focusing on delivering nutrients to the rumen that drive microbial growth.
- Avoiding a bias for and against certain ingredients is necessary to allow this to occur.

Factors needed to achieve desired cow performance while using 'alternative' ingredients include:

- Availability of different ingredients.
- Willingness to utilize ingredients that producers may not be accustomed to using. Variations in ethanol production will present us with new ingredients with different nutrient profiles.
- Utilizing a ration balancing system that incorporates a full range of nutrients as well as an understanding of nutrient digestibility in order to optimize rumen fermentation.
- Cow performance can be optimized with a wide range of dietary starch contents. The many different dairy feeding systems across the United States show that cows can produce in excess of 90 pounds of milk on diets with a wide range in starch content (18-28+%).

Another consideration is having the ability to manage the variation in nutrient content of 'alternative' ingredients. As an example, traditional corn distillers' grains are well known for the potential to have wide variation in crude protein, fat, and NDF content. However, nutrient variation of distillers and other ingredients is often much lower with certain suppliers, so having a system to monitor nutrient content is a MUST. When monitoring nutrient consistency make sure to maintain synchrony in nutrient testing. Because laboratories do not always use the same analytical procedures, there can be large differences in results between laboratories (eg. NDF

results between labs may differ by 3-5% units). Thus, care should be taken to select a reputable lab that can provide accurate, consistent, and timely results.

In 2008 and beyond, we can expect similar market volatility as factors ‘outside’ agriculture impact the agricultural economy. Continued volatility in ingredient prices looms as planting acres are expected to shift once again and corn and soybean futures are holding at very high levels. With rising feed costs, stretching every feed dollar becomes increasingly important. Producers should use multiple feed cost measures to evaluate performance on a frequent and regular basis (not one measure is perfect so use several). Utilizing one of the many financial benchmarking programs throughout the country can be an excellent way to evaluate feed costs and compare them to farms in your region.

Focus on basic fundamentals of feeding management is critical. High producing cows require consistent nutrient delivery, so there should be little tolerance for errors in feed mixing and TMR delivery (for cost control and income potential). Management of inventories to minimize shrink results in more dollars saved than ever before (5% shrink on \$250/ton for ingredient X is \$12.5/ton, but the same 5% shrink adds \$18.75/ton when ingredient X costs \$375/ton). Don’t forget about the shrink on ensiled forages; the absolute best silos approach 10% shrink, while many others are nearer 20-30% shrink.

From the perspective of diet formulation, remove paradigms about individual ingredients and work with suppliers to procure consistent nutrient sources.

- Focus on delivering digestible nutrients to cows – e.g.) feeding an ingredient with higher starch digestibility may allow for less total starch in the diet.
- Forage hybrid selection is at a premium with varieties that deliver high NDF and NFC digestibility.
- Take advantage of nutritional technologies - many farms are having great success utilizing amino acid balancing to achieve high production with diets that are low in total crude protein.
- As always, make prudent decisions on additive usage and review their effectiveness frequently. While these focal points may not seem ‘exciting’, they represent significant dollars.

To control feed costs and maintain optimal performance, dairy producers need a ‘network’ that delivers appropriate nutrient profiles to the rumen by understanding nutrient availability and controlling variation in nutrient content of ingredients.